SPEC® CFP2006 Result
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Fujitsu

PRIMERGY BX922 S2, Intel Xeon E5630, 2.53 GHz

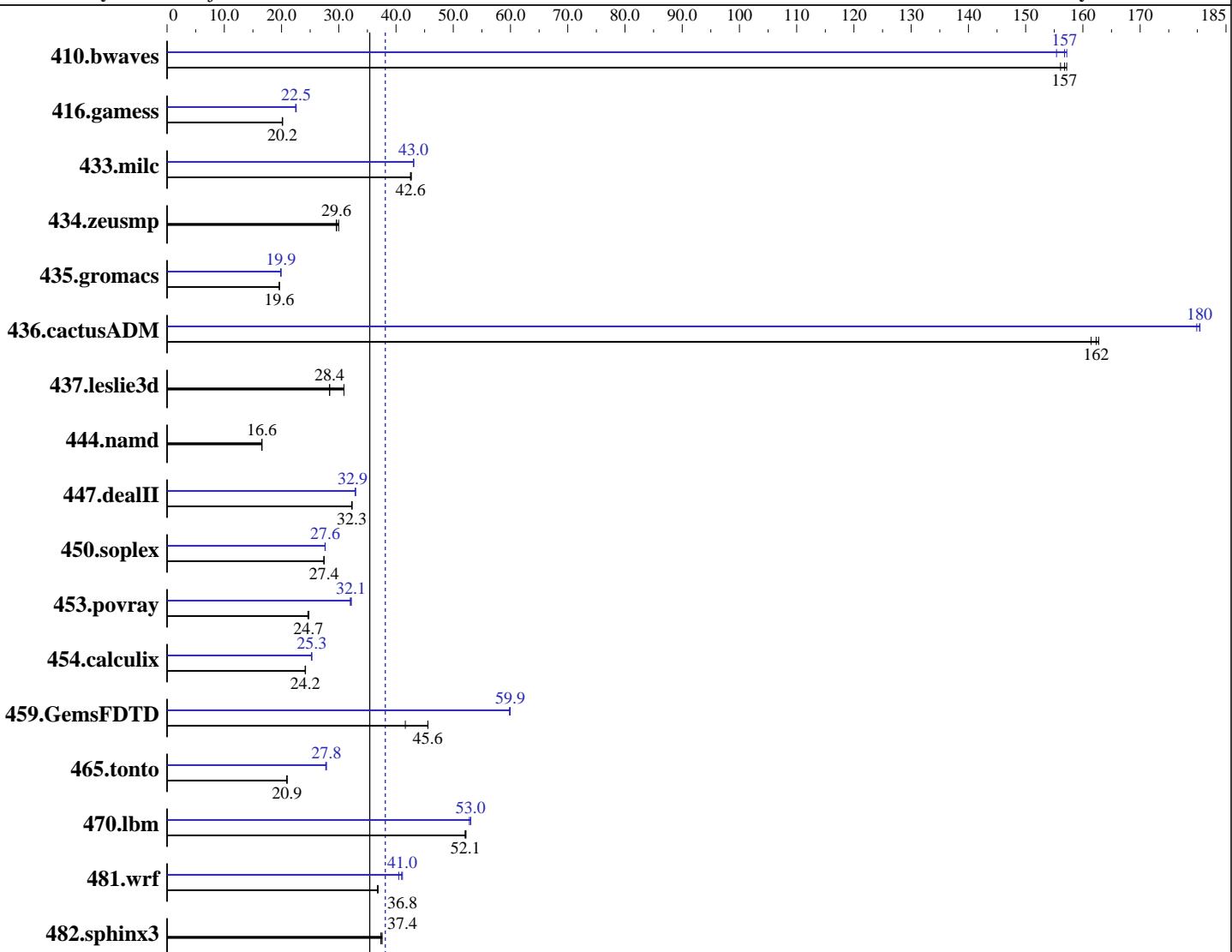$SPECfp^{®}2006 =$ 38.1

$SPECfp\_base2006 =$ 35.4

CPU2006 license: 19	**Test date:** Mar-2010
Test sponsor: Fujitsu	**Hardware Availability:** Mar-2010
Tested by: Fujitsu	**Software Availability:** Jan-2010

Results chart (SPECfp2006 benchmarks):

Benchmark	Peak	Base
410.bwaves	157	157
416.gamess	22.5	20.2
433.milc	43.0	42.6
434.zeusmp		29.6
435.gromacs	19.9	19.6
436.cactusADM	180	162
437.leslie3d		28.4
444.namd		16.6
447.dealII	32.9	32.3
450.soplex	27.6	27.4
453.povray	32.1	24.7
454.calculix	25.3	24.2
459.GemsFDTD	59.9	45.6
465.tonto	27.8	20.9
470.lbm	53.0	52.1
481.wrf	41.0	36.8
482.sphinx3		37.4

SPECfp_base2006 = 35.4

SPECfp2006 = 38.1

Hardware

CPU Name:	Intel Xeon E5630
CPU Characteristics:	Intel Turbo Boost Technology up to 2.80 GHz
CPU MHz:	2533
FPU:	Integrated
CPU(s) enabled:	8 cores, 2 chips, 4 cores/chip
CPU(s) orderable:	1,2 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	256 KB I+D on chip per core

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Software

Operating System:	SUSE Linux Enterprise Server 11 (x86_64), Kernel 2.6.27.19-5-default
Compiler:	Intel C++ and Fortran Professional Compiler for IA32 and Intel 64, Version 11.1 Build 20091130 Package ID: l_cproc_p_11.1.064, l_cprof_p_11.1.064
Auto Parallel:	Yes
File System:	ext3
System State:	Multi-User Run Level 3

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L3 Cache:	12 MB I+D on chip per chip
Other Cache:	None
Memory:	48 GB (12x4 GB PC3-10600R, 2 rank, CL9-9-9, ECC, see add'l detail in notes)
Disk Subsystem:	1 x SSD SATA, 60 GB
Other Hardware:	None

Base Pointers:	64-bit
Peak Pointers:	32/64-bit
Other Software:	Binutils 2.18.50.0.7.20080502

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	87.1	156	**86.7**	**157**	86.5	157	86.5	157	87.5	155	**86.7**	**157**
416.gamess	**971**	**20.2**	973	20.1	970	20.2	868	22.6	**869**	**22.5**	872	22.5
433.milc	**216**	**42.6**	215	42.7	216	42.5	213	43.0	213	43.1	**213**	**43.0**
434.zeusmp	308	29.6	**307**	**29.6**	303	30.0	308	29.6	**307**	**29.6**	303	30.0
435.gromacs	364	19.6	364	19.6	**364**	**19.6**	359	19.9	359	19.9	**359**	**19.9**
436.cactusADM	73.4	163	**73.6**	**162**	74.0	161	66.4	180	**66.2**	**180**	66.2	180
437.leslie3d	**331**	**28.4**	331	28.4	304	30.9	**331**	**28.4**	331	28.4	304	30.9
444.namd	484	16.6	484	16.6	**484**	**16.6**	484	16.6	484	16.6	**484**	**16.6**
447.dealII	354	32.3	354	32.3	**354**	**32.3**	347	32.9	348	32.9	**347**	**32.9**
450.soplex	304	27.4	**304**	**27.4**	304	27.5	302	27.6	**302**	**27.6**	302	27.6
453.povray	215	24.8	**215**	**24.7**	216	24.6	**166**	**32.1**	166	32.0	165	32.2
454.calculix	341	24.2	342	24.1	**342**	**24.2**	327	25.2	**326**	**25.3**	326	25.3
459.GemsFDTD	255	41.6	233	45.6	**233**	**45.6**	**177**	**59.9**	177	60.0	177	59.8
465.tonto	470	20.9	469	21.0	**470**	**20.9**	354	27.8	**354**	**27.8**	355	27.7
470.lbm	**263**	**52.1**	264	52.1	263	52.2	260	52.8	**259**	**53.0**	259	53.1
481.wrf	303	36.9	304	36.7	**303**	**36.8**	272	41.1	**273**	**41.0**	276	40.5
482.sphinx3	522	37.4	519	37.6	**521**	**37.4**	522	37.4	519	37.6	**521**	**37.4**

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run

Platform Notes

The system automatically configures the memory to run at 1066 MHz.
BIOS configuration:
Data Reuse Optimization = Disable
Intel HT Technology = Disable
Turbo Boost Technology: Performance/Power Setting = Traditional

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General Notes

```
OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to granularity=fine,scatter
KMP_STACKSIZE set to 200M
For information about Fujitsu please visit: http://www.fujitsu.com
```

Base Compiler Invocation

C benchmarks:
```
icc    -m64
```

C++ benchmarks:
```
icpc    -m64
```

Fortran benchmarks:
```
ifort -m64
```

Benchmarks using both Fortran and C:
```
icc    -m64 ifort -m64
```

Base Portability Flags

```
     410.bwaves: -DSPEC_CPU_LP64
     416.gamess: -DSPEC_CPU_LP64
       433.milc: -DSPEC_CPU_LP64
     434.zeusmp: -DSPEC_CPU_LP64
    435.gromacs: -DSPEC_CPU_LP64 -nofor_main
  436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
    437.leslie3d: -DSPEC_CPU_LP64
       444.namd: -DSPEC_CPU_LP64
      447.dealII: -DSPEC_CPU_LP64
     450.soplex: -DSPEC_CPU_LP64
     453.povray: -DSPEC_CPU_LP64
    454.calculix: -DSPEC_CPU_LP64 -nofor_main
   459.GemsFDTD: -DSPEC_CPU_LP64
      465.tonto: -DSPEC_CPU_LP64
       470.lbm: -DSPEC_CPU_LP64
        481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
     482.sphinx3: -DSPEC_CPU_LP64
```

Base Optimization Flags

C benchmarks:
```
    -xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
```

C++ benchmarks:
```
    -xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
```

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Base Optimization Flags (Continued)

Fortran benchmarks:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
```

Benchmarks using both Fortran and C:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
```

Peak Compiler Invocation

C benchmarks:
```
icc    -m64
```

C++ benchmarks:
```
icpc   -m64
```

Fortran benchmarks:
```
ifort -m64
```

Benchmarks using both Fortran and C:
```
icc    -m64 ifort -m64
```

Peak Portability Flags

```
Same as Base Portability Flags
```

Peak Optimization Flags

C benchmarks:

433.milc: `-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)`
`-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)`
`-ansi-alias`

470.lbm: `-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)`
`-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)`
`-parallel -ansi-alias -auto-ilp32`

482.sphinx3: `basepeak = yes`

C++ benchmarks:

444.namd: `basepeak = yes`

447.dealII: `-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)`
`-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)`
`-unroll2 -ansi-alias -scalar-rep- -auto-ilp32`

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Peak Optimization Flags (Continued)

```
450.soplex: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
            -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
            -opt-malloc-options=3 -auto-ilp32

453.povray: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
            -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
            -unroll4 -ansi-alias
```

Fortran benchmarks:

```
410.bwaves: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch
            -parallel

416.gamess: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
            -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
            -unroll2 -Ob0 -ansi-alias -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
            -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
            -unroll2 -Ob0 -opt-prefetch -parallel

465.tonto: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
           -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
           -inline-calloc -opt-malloc-options=3 -auto -unroll4
```

Benchmarks using both Fortran and C:

```
435.gromacs: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
             -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
             -opt-prefetch -auto-ilp32

436.cactusADM: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
               -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
               -unroll2 -opt-prefetch -parallel -auto-ilp32

454.calculix: -xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32

481.wrf: Same as 454.calculix
```

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100330.01.html

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You can also download the XML flags source by saving the following link:

http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100330.01.xml

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